

## Wind Harvest Company Prototype - Windstar 530G

North Palm Springs, CA | Installed 2001 and 2002

The Windstar 530G was a three turbine array designed to test the coupled vortex effect, a phenomenon first hypothesized by Wind Harvest founder Bob Thomas in the early 1990's. The array was placed in one of the highly energetic wind farms of San Geronio Wind Resource Area in California.

First, they installed a single turbine (T1). It operated through a range of wind speeds, modeling the typical operation of the turbine. They recorded the daily average energy production for each wind speed.

After one year of data collection, they installed two additional turbines one meter away on either side of T1, labeled T2 and T3. They measured the average daily power of T1 for each wind speed. As they tabulated the data, it became apparent that there was a significant increase in energy capture with the array configuration.

They compared the two resulting power curves, which confirmed the increased energy output from the array. Thomas named this newly discovered property the "Coupled Vortex Effect" (CVE). This discovery resulted in the awarding of International Patent US6784566 in 2004.



### Model 530G Specifications

<b>Rated power (kW)</b>	25	<b># of blades</b>	12	<b>Generator</b>	Induction
<b>Rotor Diameter (m)</b>	5.4	<b>Rotor RPM</b>	80	<b>Voltage</b>	480
<b>Swept Area (m<sup>2</sup>)</b>	48.5	<b>Solidity</b>	33%	<b># of phases</b>	3
<b>Blade length (m)</b>	3	<b>Mast support</b>	Guyed	<b>Generator RPM</b>	1810